



Bridge Inventory & Structural Recommendation Report
for
SR201, Bangerter Highway to 5600 West
Widening and Bridge Rehabilitation Project
Structure: 0F-522 & 0F-523, Bangerter and 5600 West of SR-201



Region: 2
Pin: 6385
FiNet Number: 7081601D

Project Manager: Peter Tang
Project Number: S-0201(16)4
Fiscal Year: 2008

Prepared by/Date: Raymond Earl /March 4, 2008

Director of Bridge Operations:
Rukhsana Lindsey
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Bridge Inventory & Structural Recommendation Report

Summary

Project Scope:

1. Purpose of Report:

This report presents a conceptual overview of structure needs for a rehabilitation project on SR-201 Corridor Bridges from Bangerter Hwy to 5600 West in Salt Lake County. It is intended to convey the need, scope, and cost estimate for the structure portion of the project.

2. Project Information:

Region: 2 **Route No.:** SR-201 **Date:** February 11, 2008

Project Name: SR-201, Bangerter Hwy to 5600 West; Bridge Rehab

Beg. R.P.: 11.188-13.207

Project Number: S-0201(16)4 **PIN:** 6385

Project Design: Bridge: UDOT Structures Division; Roadway: Region 2 Preconstruction

Project Mgr: Peter Tang

3. Deficiencies & History: (Summarized from Bridge Inspection Reports):

Bridge No.	Year Built	Deck Rating	Super Rating	Sub Rating	Sufficiency Rating	Construction History
0F-522	1986	7	8	8	85	Rehab done in 2003
0F-523	1986	5	8	7	99	None Noted

Information and Deficiencies (Included by not limited to):

0F-522; Bangerter Hwy over SR-201:

- Relief Joints cracked open.
- Deck has some scattered small potholes.
- Sub minor cracking of the piers.

0F-523; 5600 West over SR-201:

- Approaches have settled about three inches.
- Deck has numerous potholes.
- Backwalls is cracking and leaking.
- Outside bottom flange on the WB side has collision damage to it.

4. Plan

There are two proposed options for these bridges:

Option 1:

- Pothole patching.
- Apply Waterproofing Membrane (Only 0F-522).
- Apply Healer Sealer (Only 0F-523).
- Apply New Overlay to deck and 100' transition Overlay (Only 0F-523).
- Precast Concrete Barrier.

- Add Median Retaining Wall along SR-201 Roadway
- Erect Cantilever Sign Structures
- Seal Center Bent.
- (If Required) Cut into slope protection and build a 10' high Retaining Wall.
- Repair Collision Damage with FRP (WB Lane Exterior Girder) (Only 0F-523).

Option 2:

- Add Median Retaining Wall along SR-201 Roadway
- Erect Cantilever Sign Structures
- Pre-cast Concrete Barrier.
- Seal Center Bent.
- (If Required) Cut into slope protection and build a 10' high Retaining Wall.
- Repair Collision Damage with FRP (WB Lane Exterior Girder) (Only 0F-523)

5. Work items to be completed as part of this project:

Dependant on the selected option.

Option 1:

Option 2:

6. Work items to be deferred:

Roadway and safety items beyond what is related to the bridge repairs will not be included.

7. Design Exceptions Required:

Design Exception is not expected.

8. Maintenance Considerations:

Region 2 Maintenance Station 2424 and Salt Lake County should be included in the concept development.

9. Construction Considerations:

Traffic control could include a lane closure, which would require arrow boards and possibly flaggers. Limitations of Operations, A+B and other specifications should be considered.

Weekend and night work should be evaluated to lessen the impact on the traveling public

10. Risk Analysis:

(None anticipated at this time)

11. Development Process:

New or Major Reconstruction	<u> x </u>
Rehabilitation	<u> x </u>
Preservation	<u> </u>

Schedule & Milestones:

To be constructed with previous project.

Funding Overview:

1. **Funding Source:**
2. **Amount Programmed:**
3. **Structure Cost Estimate:**

Option 1	\$ 5,283,920 With Deck Treatments
Option 2	\$ 4,366,313 No Deck Treatments (Recommended Option)

Option 1: Structure 0F-522, Bangerter Highway over SR-201 with Deck Treatments				
ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Patch Potholes with Similar Poylmer Use in Previous Polymer Overlay	50	SF		
Apply Waterproofing Membrane (Bridge Deck & Approach Slabs)	28,760	SF		
2" HMA - 1/2 inch (Bridge Deck & Approach Slabs)	360	TONS		
1" Open Graded Surface Course, OGSC (Bridge Deck & Appr. Slabs)	180	TONS		
100' Roadway Approach (2" HMA-1/2 inch)	416	TONS		
100' Roadway Approach (1" Open Graded surface Course, OGSC)	208	TONS		
Precast Concrete Barrier (Toe of Slope Protection & Bent)	629	LF		
Seal Center Bent	4,173	SF		
If req'd cut into slope protection 15' & build 10' High Retaining Wall	3,280	SF		
Subtotal				
Option 1: Structure 0F-523, 5600 West over SR-201 With Deck Treatments				
Pothole Patching (Up to 1%, FIELD VERIFY)	249	SF		
Apply Healer Sealer (Bridge Deck & Approach Slabs)	24,860	SF		
Precast Concrete Barrier (Toe of Slope Protection & Bent)	599	LF		
Seal Center Bent	3,408	SF		
If req'd cut into slope protection 15' & build 10' High Retaining Wall	2,993	SF		
Collision Damage Repair with FRP (WB Lane Exterior Girder)	1	EA		
Subtotal				
Roadway Items for Structures 0F-522 & 0F-523 With Deck Treatments				
Median Retaining Wall on SR-201 btwn. 0F-522 & 0F-523	10,660	LF		
Cantilever Sign Structures	8	EA		
Pavement Marking Paint	1	LS		
Traffic Control	1	LS		
Mobilization	1	LS		
Public Information Service	1	LS		
Subtotal				
PE/CE 10%				
Contingency 10%				
Project Total before Inflation				
Inflation Rate @ 10% over 1 Years				
Project Total 2008 Dollars				

Note: This cost estimate is with a retaining wall. Project will cost significantly less with out a retaining wall.

Option 2: Structure 0F-522, Bangerter Highway over SR-201 No Deck Treatments

ITEM	QTY	UNIT	UNIT COST	TOTAL COST
Precast Concrete Barrier (Toe of Slope Protection & Bent)	629	LF		
Seal Center Bent	4,173	SF		
If req'd cut into slope protection 15' & build 10' High Retaining Wall	3,280	SF		

Subtotal**Option 2: Structure 0F-523, 5600 West over SR-201 With No Deck Treatments**

Precast Concrete Barrier (Toe of Slope Protection & Bent)	599	LF		
Seal Center Bent	3,408	SF		
If req'd cut into slope protection 15' & build 10' High Retaining Wall	2,993	SF		
Collision Damage Repair with FRP (WB Lane Exterior Girder)	1	EA		

Subtotal**Roadway Items for Structures 0F-522 & 0F-523 With No Deck Treatments**

Median Retaining Wall on SR-201 btwn. 0F-522 & 0F-523	10,660	LF		
Cantilever Sign Structures	8	EA		
Pave ment Marking Paint	1	LS		
Traffic Control	1	LS		
Mobilization	1	LS		
Public Information Service	1	LS		

Subtotal

PE/CE 10%

Contingency 10%

Project Total before Inflation**Inflation Rate @ 10% over 1 Years****Project Total 2008 Dollars**

Note: This cost estimate is with a retaining wall. Project will cost significantly less with out a retaining w

Location Map

SR-201, Bangerter Hwy and 5600 West Location of 0F-522 & 0F-523

